

Everyday GenAI: Research, Writing, and Design Tools for Transportation Professionals



Using GenAI to Find Information and Data in the Transportation Industry

 @MinetaTrans

 @MinetaTransportation

Egbe-Etu Etu, PhD

MTI Research Associate & SJSU Assistant Professor

November 13, 2025. 12:00-1:00p.m. (PT)



Agenda

- What is GenAI
- Why it matters for transportation
- Steps for finding data with GenAI
- Prompt engineering
- Validating results
- Hands-on activity



Are you familiar with this logos?



ChatGPT



Microsoft Copilot



Google's Gemini



Claude AI by Anthropic

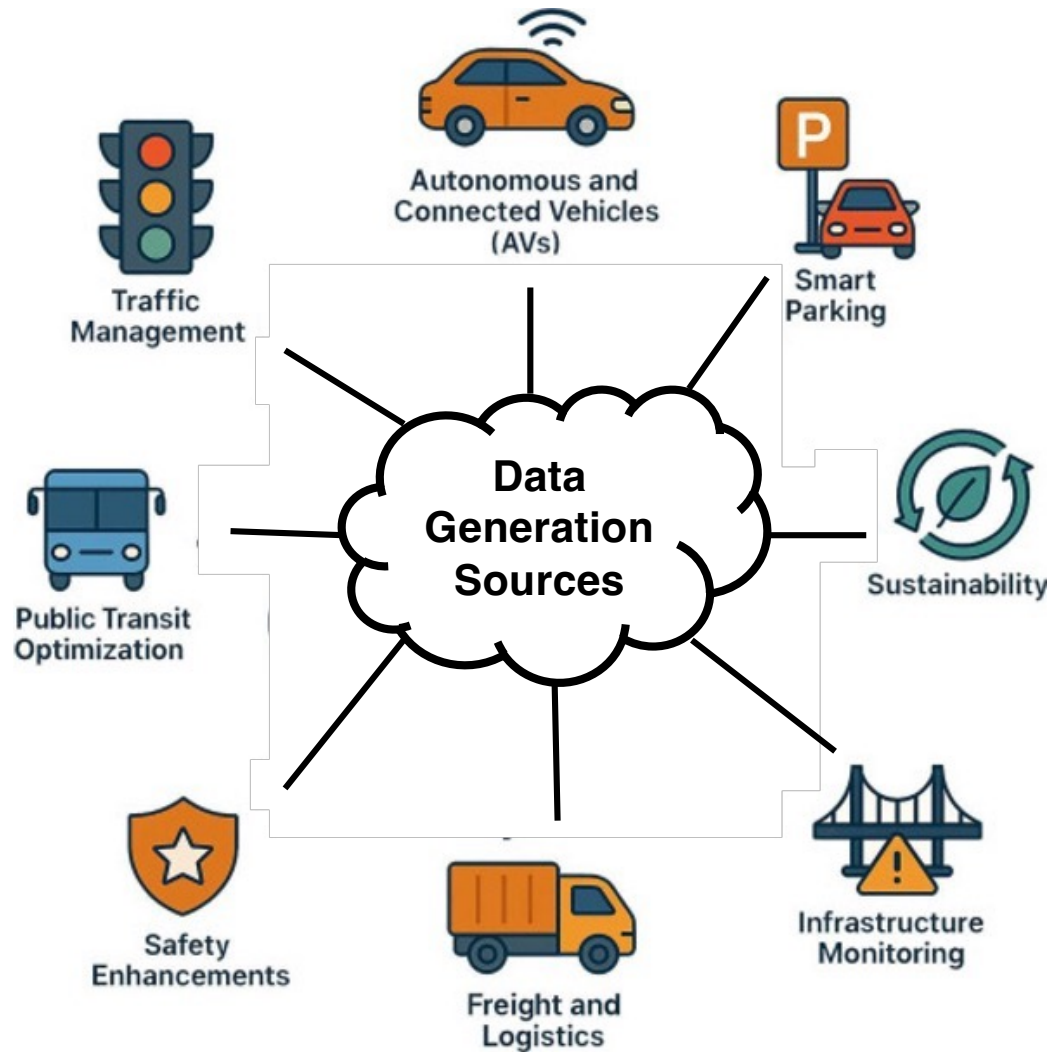


Jasper AI

What is GenAI

- Generative and Artificial Intelligence (AI)
- GenAI refers to AI systems that can **generate new content**, such as text, images, code, or summaries, based on patterns learned from large datasets
- **How it works:** GenAI uses large language models (LLMs) trained on big data to predict the next best word or image
- Examples of GenAI tools
 - Text-based: ChatGPT, Claude, Google Gemini, Microsoft Copilot

Why it matters for transportation



Adapted from: Saki, S., & Soori, M. (2025). Artificial Intelligence, Machine Learning and Deep Learning in Advanced Transportation Systems, A Review. *Multimodal Transportation*, 100242.

Steps for finding data with GenAI

1. Clearly define your objective
2. Select an appropriate GenAI tool or platform
3. Create your prompts (i.e., the query)
4. Iterate and refine your prompts
5. Review and validate the results
6. Use the verified data or results to make informed decisions

Prompt engineering

The process of **crafting clear, specific, and contextual instructions** (i.e., queries or prompts) for GenAI to produce useful responses

Example Prompts:

✗ Bad: *Prompt 1* - Find me transportation data

✓ Good: *Prompt 2* - List three open datasets on public transit ridership trends in the U.S. between 2018-2024, including their sources and download links

Validating the results

1. Always check the data source
2. Verify the dataset on official websites
3. Check recency

Hands-on Activity

Scenario 1: As a transit analyst, you're preparing a report on public transit ridership decline after COVID-19, and you need some data

Scenario 2: As a city planner, you want to model congestion patterns for freight delivery in San Jose, CA

Key Takeaways

GenAI can help you:

- Find credible transportation datasets faster
- Provide summaries and explanations for certain information that is easily digestible

But remember:

- Always verify data sources
- Use GenAI as a co-pilot not a replacement for critical thinking

THANK YOU!!



Egbe-Etu Etu, PhD
MTI Research Associate & SJSU
Assistant Professor
San Jose State University, CA
egbe-etu.etu@sjsu.edu



Connect with me
on LinkedIn